

CLAIMS

What is claimed is:

1. A system for signal conversion, comprising:
a spreader that combines a spreading signal with an input signal to provide a spread input signal;
a signal converter that converts the spread input signal from a first domain to a second domain to provide a converted spread input signal; and
a despreader that despreads the converted spread input signal to provide the input signal in the second domain.
2. The system of claim 1, further comprising a spreading code generator that produces spreading codes to provide a direct sequence spread spectrum (DS-SS) spreading signal.
3. The system of claim 2, the spreading code generator further produces a frequency hopped spread spectrum (FH-SS) signal that is combined with the DS-SS spreading signal.
4. The system of claim 1, further comprising a spreading code generator that generates a pseudo random number code to provide a spreading signal.
5. The system of claim 1, further comprising a feedback loop coupling the despreader to the spreader for time aligning the despreading with the spreading.
6. The system of claim 1, wherein the first domain is one of a digital domain and an analog domain and the second domain is the other of the digital domain and the analog domain.

7. The system of claim 1, further comprising a mixer for frequency converting the spread input signal prior to despreading.

8. The system of claim 1, wherein the signal converter is one of a delta-sigma analog-to-digital converter (ADC) and a delta-sigma digital-to-analog converter (DAC).

9. The system of claim 1, further comprising a clipping component that reduces peaks associated with the spread input signal, the despreader mitigates degradation and out-of-band (OOB) emissions associated with the peak reduction.

10. The system of claim 1, wherein at least one of the spreader and the despreader circuit comprises a mixer.

11. A receiver comprising the system of claim 1.

12. A transmitter comprising the system of claim 1.

13. A signal conversion system comprising:
a spreading code generator that produces a direct sequence spread spectrum (DS-SS) signal;
a spreading circuit that receives an input signal and combines the input signal with the DS-SS signal to provide a spread input signal;
a clipping component that reduces peaks associated with the spread input signal;
and
a despreading circuit that despreads the peak reduced spread input signal.

14. The system of claim 13, wherein at least one of the spreading circuit and despreading circuit comprises a mixer.

15. The system of claim 13, further comprising a signal converter that converts the spread input signal from a first domain to second domain, the signal converter being one of a digital-to-analog converter (DAC) and an analog-to-digital converter (ADC).

16. The system of claim 15, the signal converter being one of a delta-sigma DAC and a delta-sigma ADC.

17. The system of claim 15, further comprising a second signal converter for converting the spread signal from the second domain to the first domain.

18. The system of claim 15, further comprising a mixer for frequency converting the spread input signal one of before signal conversion and after signal conversion.

19. A method for signal conversion, comprising:
spreading a signal with a direct sequence spread spectrum (DS-SS) signal in a first domain;
converting the spread signal from the first domain to a second domain; and
despreading the signal with a DS-SS signal in the second domain.

20. The method of claim 19, further comprising spreading and despreading the signal with a frequency hopped spread spectrum (FH-SS) signal.

21. The method of claim 19, wherein the first domain is one of a digital domain and an analog domain and the second domain is the other of the digital domain and the analog domain.

22. The method of claim 19, further comprising frequency converting the signal to an intermediate frequency.

23. The method of claim 19, further comprising:
receiving the signal from an antenna;
filtering the signal;
amplifying the signal; and
converting the signal to an intermediate frequency signal prior to spreading the signal.

24. The method of claim 19, further comprising:
converting the signal to a radio transmission frequency;
filtering the signal;
amplifying the signal; and
transmitting the signal over an antenna

25. The method of claim 19, further comprising clipping the signal to reduce peaks associated with the signal.

26. A communication device comprising:
means for generating a direct sequence spread spectrum (DS-SS) signal;
means for combining the DS-SS signal with an input signal to produce a spread input signal;
means for converting the spread input signal from a first domain to a second domain; and
means for despreading the spread input signal in the second domain.

27. The device of claim 26, further comprising means for removing peaks from the spread input signal.